Flight Deck Systems, Displays, and Related Topics of Interest to Human Factors Specialists

The table below was developed to respond to repeated requests by FAA and industry representatives to the question "what groups are working on flight deck systems, displays, and related topics of interest to Human Factors Specialists."

The first column, entitled "Group Topic," contains the group title or general topic area that the group is addressing. The second column, entitled "Organization," contains the organization or body under which the working group operates. The "working on/ status" column contains a general overview of the group's activities and documents being worked.

Group Topic/Title	Organization	Working on/ Status
1. Human Factors Harmonization Working Group	ARAC Part 25	Closed. Tasked with providing advice and recommendations related to flight crew error and flight crew performance considerations in the flight deck certification process in accordance with the tasking that the Aviation Rulemaking Advisory Committee has accepted from the FAA (reference FAA Notice FR July 22, 1999). Group's last meeting was Feb 2004. Co-chairs: Curt Graeber (Boeing) & Didier Ronceray (Airbus)
2. Avionics Harmonization Working Group	ARAC	Tasked with updating advisory circular 25-11, electronic displays, as well as updating and harmonizing 14 Code of Federal Regulations 25.1322 (Alerts) and associated advisory material, including AMJ 25.1322. Clarke Badie from Honeywell is the working group chair.
3. Flight Guidance Systems Harmonization Working Group	ARAC	Closed. Taksed with update to 25.1329 and 25.1335 rule & AC on autoflight systems certification. Final report submitted to TAEIG. (Chaired by John Ackland (Boeing) and James Beale (BAE Systems))
4. All-Weather Operations Harmonization Working Group	ARAC	Update to criteria for low-visibility operations (Chaired by John Ackland (Boeing) and James Beale (BAE Systems))
5. Flight Systems Integration Committee	ATA	Equipment related
6. Human Factors	ATA	Operators focus on HF (Chair: Don Gunther, Continental)
7. Automation	ATA	Focus on implementing the operator-related

Subcommittee		recommendations in the FAA HF Team report
8. Digital Displays Working Group	ATA	Closed. Previously group worked on facilitating transition to a paperless flight deck, including working to encourage the development of Electronic Flight Bag technology. The group got updates from manufacturers and airlines pursuing this technology, as well as assisted in the development of a Volpe Center Human Factors guidance document funded by the FAA. Chair is Bill Leroy (USAirways). ATA point of contact is Jim McKie.
9. FMS/RNAV Task Force	ATA	Advanced Instrument procedures, RNAV and FMS issues. Chair: Frank Alexander, NWA
10. Charts, databases, & Avionics HWG	ATA FMS Task Force	Group chartered in response to the Cali crash. A major objective is to make the charts match what is indicated on electronics/avionics. Group has been working since 1997.
11. JSAT- Joint Safety Analysis Team	FAA/Industry	A total of 16 Joint Safety Analysis Teams attempt to take a data driven, proactive approach to prevent future accidents and incidents, by analyzing previous accidents and incidents. Teams are broken up into general domains (ex. General Aviation weather, Commercial CFIT, etc.). The list of the 16 JSAT initiatives can be found on the WEB at: *http://www.agl.faa.gov/Public Affairs/1999 FS/faagoals.html*
12. JSIT- Joint Safety Implementation Team	FAA/Industry	Each JSAT (see above) is followed by a JSIT. These teams are charted with reviewing and implementing appropriate recommendations made by the JSAT.
13. Vertical Flight Working Group FAA Satellite Operational Implementation Team (SOIT)	FAA/Industry	Vertical Flight Working Group (VFWG) Satellite Operational Implementation Team (SOIT) – CONOPS and Infrastructure requirements for GPS implementation for Vertical Flight.
14. GAMA/FAA Part 23 working group	General Aviation Manufacturers Association (GAMA)	Closed. This working group developed a document entitled “Recommended Practices and Guidelines for Part 23 Cockpit/Flight Deck Designs” published in September 2000 (GAMA Pub. 10). This document is intended to be a living document and will be modified in the future to reflect inputs received from manufactures or from FAA sources. The

		document can be downloaded at: www.generalaviation.org
15. GAMA WAAS Interface Requirements	GAMA/ RTCA SC-159	Closed. Culmination of over two years of work to address contentious interface issues where some wanted a single standardized interface, manufacturers pushed back that FAA can't and shouldn't dictate design. This group obtained industry/FAA consensus on minimum GPS/WAAS requirements for RTCA SC-159 document 229A "WAAS Minimum Operation Performance Standard" published in June 1998. This document was invoked by an FAA Technical Standard Order.
16. Safety Committee	IATA	
17. Flight Operations	IATA	
18. Human Factors	IATA	
19. Human Factors	ICAO	
20. Human Factors	RE & D Advisory Committee	Industry group to review human factors research program and make funding recommendations to congress. Influences what gets funded in FAA Office of the Chief Scientific and Technical Advisor for Human Factors (AAR-100; under Research and Acquisitions).
21. Certification Select Committee	RTCA	Oversee implementation of RTCA Certification Task Force (CTF) Task Force IV. Task Force IV was chartered to make the certification process faster, cheaper, and safer. In this group the term "certification" was used in a larger, end-to-end sense, not strictly aircraft certification.
22. Weather Displays	RTCA SC-169	Working towards a revision on RTCA Minimum Aviation System Performance Specifications (MASPS) RTCA DO-267A for weather display systems. This MASPS may be invoked by an FAA Technical Standard Order or Advisory Circular.
23. Moving Map Displays	RTCA SC-181 WG 4	Closed. Published Minimum Operational Performance Standards (MOPS) RTCA DO-257A for the Depiction of Navigational Information on Electronic Maps on June 25, 2003. This document has been invoked by FAA Technical Standard Order C165 for moving map displays.

24. Cockpit Display of Traffic Information	RTCA SC-186 WG 1-subgroup 3	Since 1997 this group has been working towards publishing a Minimum Operational Performance Standard (MOPS) for cockpit display of traffic information (CDTI) for systems driven by ADS-B.
25. High Frequency Data Link Equipment	RTCA SC-188	This group is responsible for development of the High Frequency Data Link Equipment minimum operational performance standards (MOPS) and minimum aviation system performance standards (MASPS). It is anticipated that these MOPS and MASPS will form the basis for TSO and AC development.
26. Initial Oceanic and Remote Airspace Safety Objectives and Interoperability Requirements	RTCA SC-189 & EUROCAE WG-53	This is a joint endeavor with the participation of EUROCAE WG-53 tasked with the development of the safety, performance, and interoperability assessment methodology for data link applications used for Air Traffic Service (ATS) communications.
27. Terrain, Obstacle, and Database	RTCA SC-193	Working database requirements and graphical terrain depiction requirements. Representative from the FAA is Gary Livak.
28. Data Link Human Factors	RTCA-SC 194 Working Group 4	Closed. Published RTCA document "Minimum Human Factors Standards for Air Traffic Services via Data Communications Utilizing the ATN, Builds 1 and 1A." This was published as RTCA DO-256 on June 20,2000. The group currently supports the human factors aspects of the other SC-194 working groups.
29. Night Vision Goggles	RTCA SC-196/ EUROCAE WG 57	This special committee was kicked off as a joint RTCA/Eurocae working group in 1999 and tasked with completing three Night Vision Goggle documents: • Concept of Operations • MOPS • Training Guidelines
30. Streamlining Certification - Human Factors	RTCA TF IV	Task force final report is complete and was submitted to the FAA administrator on March 1, 1999. Task Force chartered to make the "certification process" faster, cheaper, and better. The human factors working group focused on identifying ways to take credit for the positive effects of having a human in the loop as well as determining how to improve the process of incorporating human factors engineering principles throughout the design process.

31. Autopilot Design	SAE S7	This group is comprised primarily of pilots. Draft ARP.
32. Multi Function Displays	SAE G10	Drafting an Aerospace Recommended Practice and an Aerospace Recommended Design documents. Chaired by Archie Dillard.
33. Head Up Display (HUD)	SAE G10	Working on Aerospace Recommended Practice.
34. Automation	SAE G10	Inactive (but not closed) group at the current time.
35. Charting	SAE G10	Working several charting issues (paper and electronic) including industry standards and recommended practices for electronic flight bags. The group charter appears to overlap somewhat with the ATA Digital Displays Working Group.
36. Vertical Situation Awareness Display	SAE G10	Closed. Published a document SAE ARP 5430 to give manufacturers of vertical situation awareness displays some basic design guidance.
37. Vertical Flight	SAE G10	SAE G-10 Vertical Flight Working Group is developing ARP 5465 “Best Human Factors practices for the Vertical Flight Design Process”
38. Safety Assessment	SAE S-18	
39. Human Modeling	SAE S-13	
40. Human Factors Steering Group	JAA	Chaired by Hazel Courtney of the CAA.
41. Terrain Awareness Warning Systems (TAWS) Metric		

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